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TITLE : PRODUCTION OF COPOLYETHER POLYOL

ABSTRACT : PROBLEM TO BE SOLVED: To produce a copolyether polyol while preventing the compositional ratio from fluctuating by distilling the water formed as a result of reaction out of the reaction system by vaporizing it together with tetrahydrofuran, removing the water from the distillate and returning the tetrahydrofuran to the reaction system.

SOLUTION: Tetrahydrofuran (hereinbelow referred to as THF) and a 2-10C diol (e.g. neopentyl glycol) are fed into a reactor fitted with an agitator, a distillation device and a condenser, and a specified amount of a heteropoly acid catalyst (e.g. phosphotungstic acid) is added to the mixture. The entire mixture is heated to 30-90°C and agitated for about 15hr, and the water formed in an amount larger than that used in the reaction is distilled out of the reaction system together with THF. The distillate is sent to the bottom of a molecular-sieve-packed adsorption tower to adsorptively remove the water from the distillate. The distillate devoid of the water is withdrawn from the top of the tower and wholly returned to the reactor. After the reaction, the reaction solution is left in a quiescent state at room temperature to separate it into two layers. The upper layer is withdrawn, and $\text{Ca}(\text{OH})_2$ is added thereto to precipitate the contained catalyst, which is removed by filtration. The THF is removed from the filtrate by distillation to leave a transparent copolyether polyol.

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